

21. ADULT EDUCATION.

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Introduction

Public concern and pressure for adult education and lifelong learning continue to increase in the United States. It is estimated that 15.5 million Americans 17 years of age and older have participated in formal adult education programs. Table 1 indicates participation of males and females by instructional source in structured adult education activities. Approximately 11 million additional students were also enrolled in adult and continuing education programs offered by various community organizations in 1972, as indicated in Table 2.

TABLE 1.—Total adult (17 and older) participation in instructional sources of adult education, United States, May, 1969

Instructional source	Number of men	Number of women	Total number
Public or private school	1,557,000	2,081,000	3,638,000
College or university part-time	1,853,000	1,459,000	3,312,000
Job training	2,558,000	1,056,000	3,614,000
Correspondence courses	736,000	315,000	1,051,000
Community organizations	573,000	1,191,000	1,764,000
Tutor or private instructor	266,000	492,000	758,000
Miscellaneous activities	701,000	647,000	1,348,000
Totals	8,244,000	7,241,000	15,485,000

SOURCE: Okes, I.E. (62).

The tables do not fully account for the millions of Americans involved in community education programs sponsored by such organizations as State Cooperative Extension Services, official and voluntary health organizations, hospitals, the armed forces, community development agencies, community action agencies, and other related organizations. According to Grabowski (26), adult participation in educational programs ranges from 25 million to 60 million, depending upon the assessment criteria. It appears that since 1975 more adults were engaged in vocational and adult educational activities than young people attending the formal educational system at all levels (82). Accordingly, formal and informal adult education offers a tremendous potential for health and educational professionals to influence lifestyles and prevent illness and injury.

Hiemstra (30) identified several forces that have played a major role in creating an interest in and a need for lifelong learning. Social and technological advances, as well as changes in lifestyle and value systems, have tended to exert pressures on adults to seek continuing education as a means to obtain the skills and knowledge necessary to cope with social problems.

TABLE 2.—Adult and continuing education in community organizations: 1972 data

Type of organization	Number with adult education programs ^a	Number of people involved	% of total
Churches	50,480	3,614,000	32.9
Other religious groups ^b	3,310	474,000	4.3
Y's and Red Cross	3,360	3,050,000	27.8
Civic organizations ^c	3,730	1,175,000	10.7
Social service groups ^d	4,350	2,285,000	20.9
Cultural and other groups ^e	1,540	370,000	3.4
Totals	66,770	10,968,000	100.0

^aAdult education programs included those aimed at skill, knowledge, and attitude building. They included organized instructional efforts, primarily on a part-time basis, and did not include credit classes, in-service training efforts, and recreational activities.

^bChurch headquarters, council of churches, Salvation Army, youth centers, related homes for the aged, etc.

^cNeighborhood centers, senior citizen groups, civil liberties groups, and others concerned with community issues and betterment.

^dSocial welfare groups, American Cancer Society, vocational rehabilitation, alcohol groups, etc.

^eSocial and literary societies, civic theater groups, symphony organizations, etc.

SOURCE: Kay, E.R. (36).

Vivian and Wesley (94) point out that “education is the key to continuing lifelong growth and action, a means by which one can see what more he or she can learn and do, regardless of age or circumstance.”

Various educational researchers have commented upon the high level of adult interest and participation in learning activities outside the institutional framework of education. Tough (89), for example, discovered that many adults spend 700 to 800 hours each year in learning activities, but that a large part of this learning is self-planned and separate from the typical formal classroom-related activity. As a result, educators are increasingly interested in nontraditional activities, alternative learning programs, innovative educational ideas, and new teaching strategies based on the concept and need for lifelong adult learning (30).

Bergevin (6) lists five basic goals for adult and continuing education: (1) to help the learner achieve a degree of happiness and meaning in life; (2) to help the learner understand himself, his talents and limitations, and his relationship with other persons; (3) to help adults recognize and understand the need for lifelong learning; (4) to provide conditions and opportunities to help the adult mature spiritually, culturally, physically, politically, and vocationally; and (5) to provide, where needed, education for survival in literacy, vocational skills, and health measures. Thus, as Wallace (95) indicates, health education should be considered for lifelong development of individuals. Health education ought to continue throughout life to help individuals to maintain their health.

Each section of this chapter will discuss adult education opportunities related to cigarette smoking and the implications for educational agencies, professional and voluntary organizations, and the federal government.

Health Competency Development and Smoking Education

The major purpose of the Adult Education Act, Public Law 89-750 (91) and its amendments through 1974, including Public Law 93-380 (92), is the establishment and expansion of adult public education programs to enable all adults to continue their basic education at least to the termination of secondary school and to receive training enabling them to become productive and responsible citizens. The Adult Education Act has provided the necessary financing for establishing Adult Basic Education (ABE) programs that stress certain teaching skills necessary for maintaining daily life and fulfilling adult responsibilities. Section 306 of the Act (91) makes provisions for cooperative arrangements between State educational agencies and State health authorities to provide health information and services that may be necessary to enable adults to benefit from such instruction. However, Mezirow, et al. (49) indicate that most teachers of ABE stress reading, writing, and arithmetic skills and make some effort to apply these basic skills to practical daily life.

The Adult Performance Level (APL) Study (2), conducted under the direction of Northcutt from 1972 to 1976, aroused Federal, State, and local concern for the teaching of life skills. The study staff identified 65 objectives which comprise functional literacy and grouped them into five general knowledge areas: occupational knowledge, consumer economics, health, community resources, and government and law. Thus, APL theory implies that basic skills be taught to provide adults with the knowledge and ability to participate effectively in society.

Flaherty (22) recently completed a systematic study of the self-perceived needs of students enrolled in ABE programs in New Jersey. A sample of 204 students showed that 72 percent indicated interest in occupational knowledge, 58 percent in consumer economics, 56 percent in health, 74 percent in government and law, and 50 percent in community resources. In the ranking of competencies in the health areas, 67.6 percent indicated they wanted to learn more about what practices are dangerous to health.

More recently, the Texas Department of Education developed an APL test designed to evaluate competencies needed for adult living, and the American College Testing Corporation established national norms for the competency-based examination (20). Eight test items to assess content area of community resources, occupational knowledge, consumer economics, mental and physical health, and government and

TABLE 3.—Adult performance level — goals and objectives for the content area of mental and physical health

APL Content Area - Mental and Physical Health

Goal: To understand the principles and practices that lead to good mental and physical health.

Major Objectives:

- I. People should know where, when, and why to seek medical help. This means that they should:
 - A. Recognize obvious signs of illness and know which require professional attention.
 - B. Know the various types of medical facilities typically available in a community.
 - C. Know how and why to follow medical instructions.
 - D. Know how and why to communicate information about health problems to others.
- II. Individuals should know what personal habits promote good health. This means that they should:
 - A. Know the basic principle of health maintenance.
 - B. Know the basic principles of nutrition.
 - C. Understand the relationship between drugs and health.
- III. Individuals should know how to apply principles of health to planning and raising a family. This means that they should:
 - A. Understand the physical and psychological influences of pregnancy and the need for proper prenatal care.
 - B. Understand the importance of family planning and the effectiveness of various birth control practices.
 - C. Know basic child-rearing practices.
 - D. Understand the special health needs and concerns of adolescents.
- IV. People should know how to deal with potential hazards and accidents. This means that they should:
 - A. Recognize potential hazards.
 - B. Know where and when to apply basic safety measures.
 - C. Know when and how to apply first aid.
 - D. Know how and whom to ask for help in emergencies.

SOURCE: Fagerberg, S. (20).

law are included in the final instrument along with six to nine items designed to assess living skills.

Fagerberg and Holyoak (20) identified objectives that have major program implications for health and safety education (See Table 3). Several objectives relate indirectly to the health hazards associated with cigarette smoking; however, the APL program does not include objectives directly relating to smoking education. Thus, there appears to be a serious void in the content material of this program.

Recommendations

1. Adult Basic Education programs should incorporate more effective health education activities, including smoking education. Adults should receive information on the health hazards of smoking, benefits derived from cessation, the effect of smoke pollution on nonsmokers, the influence of peer groups and significant others, the economic factors involved, and the community services and self-help techniques available to modify or change destructive lifestyle patterns.

2. The Adult Performance Level Program that defines skills and knowledge necessary for successful functioning in society should provide more emphasis on health maintenance measures, including smoking education.

3. Teacher training institutions must better prepare adult and continuing education students for a significant role as change agents. Consideration should be given to the concept of the teacher as a facilitator and resource person who assists adult learners to determine their needs and to assess the resources that effectively promote positive lifestyles.

4. State and local educational agencies should provide more teacher training programs in health education, including study of risk-taking behavior, not limited solely to smoking education.

5. Professional and voluntary health agencies need to provide consultative and resource services to local ABE programs to help strengthen their health education components.

6. Federal agencies should encourage adult education programs to place more emphasis on preventive health education programs and to develop model programs in health education that could be replicated elsewhere.

Accessibility to Instruction

Formal health education classes are now offered in most colleges and universities in the United States as evidenced by current college catalogs. College students generally are exposed to introductory courses in personal health on an elective basis or as part of the general requirements for the baccalaureate degree. Major units in introductory courses usually include instruction on smoking and health and cover such topics as the use of tobacco, the consequences of smoking, reasons for smoking or not smoking, cessation techniques, risk reduction, economic consequences, and social approaches to combat the problem.

A recent study, conducted by Goodrow (25) to determine current health areas of high interest and concern to college students at Western Kentucky University, reveals that smoking and disease ranked fourth in interest out of 50 topics and received a relatively high weight with respect to degree of concern. Another important finding is that major student health interests and concerns changed little over a

6-year period when compared to previous studies at the University of Oregon and the University of Tennessee.

Worden, et al. (99) studied audience interest in 25 potential message concepts that were to be employed in a mass media campaign designed to influence knowledge, attitudes, and behavior concerning lung disease. The investigators found that individuals aged 50 and older were most interested in messages that suggested ways to deal with symptoms of lung disease and that smokers expressed highest interest in messages that offered advice on how to quit smoking.

A study by DeRoos and Coder (16), into the health concerns of a low-income, multiethnic female population, indicated that the subjects gave high priority to heart disease, cancer, and drug problems and low priority to such health concerns as overweight, long-range effects of alcohol, and smoking and health. Respondents failed to see the relationship between smoking and heart disease and cancer.

Adult educational campaigns against cigarette smoking have used many combinations of methods and materials, including advertising through mass media, pamphlets, exhibits, films, group discussion, counseling, public lectures, smoking-withdrawal clinics, and other assorted techniques (88). However, few of these programs have produced significant changes in the smoking behavior of adults (3, 19, 67).

Although studies indicate concern and interest on the part of many adults for adult education programs concerning smoking, in terms of their impact on smoking behavior, such programs have not been particularly successful. College students have more access to formal educational programs involving smoking education. Other adults are much more likely to receive less intensive antismoking education via the mass media, pamphlets, posters, or single lectures. At the same time, they receive many advertising and other messages which encourage smoking.

Many health educators say that individuals have significant responsibility for their own health (42, 50, 68, 84, 85). The report of the Task Force on Consumer Health Education (84) emphasizes that individual behavior and lifestyle play a major role in health, illness, disability, and premature death and that behavior and lifestyle are influenced by many internal, external, environmental, and societal factors. As one of its major goals, the National Consumer Health Information Act of 1976 (Public Law 94-317) advocates an increase in the individual's capacity and incentive to take major responsibility for his own health maintenance.

Recommendations

1. Colleges and universities should seek to maintain and strengthen their existing health education courses while maintaining a positive focus on smoking education.

2. Teacher training institutions need to consider that all students majoring in education, and in elementary education in particular, should be required to enroll in basic health education courses that include our major societal health problems. Method courses should provide future teachers with innovative teaching strategies and materials concerning smoking education. State and local educational agencies should give strong consideration to requiring for certification, as a minimum, a methods and a content course in health education.

3. Professional and voluntary organizations and federal health agencies need to provide technical and logistical support based on sound behavioral science principles to all levels of adult education programs.

4. New model adult educational programs need to be developed in concert with all agencies and institutions concerned with the smoking problem. The coordination of program efforts is essential for the development of successful model community programs. Also, a strong financial commitment to smoking education by federal health agencies, as well as by professional and voluntary agencies, is necessary to support sound research and demonstration projects.

Influence of Adult Role Models

Among the most powerful determinants of teenage cigarette smoking are the smoking practices of significant others (27). This section describes some published research reports concerning the influence on smoking behavior by health professionals, teachers, coaches, parents, and peers. Glover (24) claims that "in terms of promoting health behavior and life styles, modeling exists as a powerful tool that may either greatly enhance or destroy the verbal message of human health."

Health Professionals

Surveys conducted in Switzerland by Abelin (1) indicate that physicians were generally regarded as the most likely persons from whom advice on smoking would be accepted by smokers and nonsmokers. Most nonsmokers, but only a minority of smokers, were willing to accept similar advice from dentists.

A nationwide survey of American teenagers conducted by the American Cancer Society (66) indicated that 72 percent of the nonsmokers identified physicians as the one group that could influence them not to start smoking. Correspondingly, 42 percent of the smokers felt that the physician's advice would influence their decision to stop smoking.

Klonglan, et al. (39) undertook a study to determine how the general public perceives physicians as nonsmoking exemplars. Approximately 88 percent of the sample indicated that teachers, parents, and health

professionals (physicians in particular) should act as exemplars by not smoking cigarettes. In addition, physicians were perceived as educators in conveying the hazards of smoking to their patients. Also, 20 percent of the subjects felt that dental associations should be more actively involved in smoking education programs.

While several studies (10, 43, 60, 81) have indicated that cigarette smoking is less common among physicians than in the general public, certain medical specialists, psychiatrists in particular, tend to have higher smoking rates than other specialists. Low smoking rates were observed among internists, cardiologists, and physicians who were more apt to be exposed to patients with pathological states related to smoking. Accordingly, Purvis and Smith (70) suggested that increased emphasis on the health consequences of smoking be included in the medical curriculum. Further, Aronow (4) suggested that the medical profession assume leadership in educating the public about the health hazards of smoking and vigorously promote smoking-cessation programs.

Numerous studies (5, 39, 65, 75, 90) indicate specific strategies that physicians should use in assisting patients to stop smoking. Among the techniques mentioned are conveying the idea that smoking is hazardous, giving simple, firm instructions to stop, and suggesting attendance at smoking withdrawal clinics. Burke (12) also advocated that physicians serve as role models and support the rights of nonsmokers.

Several studies (11, 23), which found that a relatively high percentage of nurses smoke, expressed concern about nurses serving as exemplars and educators. A recent study by Burk and Nilson (11) indicated that the majority of both smoking and nonsmoking nurses felt that they had an important role in educating patients about the health consequences of smoking.

Teachers

Newman (58) surveyed 653 elementary and secondary teachers to determine their perceptions of the exemplar role, whether they believed they could influence student smoking behavior, and if they would be willing to change their smoking behavior if they felt it would benefit their students. Sixty-two percent of the smokers and 73 percent of the nonsmoking teachers felt that their behavior influenced the smoking habits of their students. The teachers also expressed a willingness to restrict their smoking as an example to their students, and 80 percent of the total sample indicated that teachers should not smoke when student smoking is prohibited. Thus, Newman (58) concluded that teachers "display a readiness to assume the exemplar role in smoking."

The smoking behavior and attitudes of 162 elementary, junior high, and secondary school teachers were studied by Chen and Rakip (13) to

ascertain if the teachers' smoking behavior was related to their attitudes and behavior toward students' smoking practices and smoking education in schools. Results indicated that the teachers' attitudes and behavior toward smoking education *were* related to their smoking practices. Also, ex-smokers were more active in attempting to change student smoking behavior than were present smokers. The authors concluded that teachers need more inservice and preservice teacher-training programs involving smoking education.

Rabinowitz and Zimmerli (71), using a limited sample, studied the effects of a smoking education program on students, teachers, and parents and concluded that the students had significantly more behavior-modification influence on the teachers and parents than vice versa.

An American Cancer Society study (34) to determine public school teachers' cigarette smoking attitudes and practices indicated that 21 percent of the teachers sampled currently smoked cigarettes and 22 percent were ex-cigarette smokers. Thus, cigarette smoking appears to be lower among teachers than the general adult population and has shown a general declining trend over the past 10 years. Smoking was observed to be higher among guidance counselors than among health education or science teachers, and the teachers indicated that smoking and health education needed to be introduced in elementary schools rather than in junior or senior high schools.

Coaches

Morris and Tichy (51) surveyed the smoking habits and attitudes of Oregon secondary school coaches and found that 84.5 percent believed that smoking constituted a moderate or severe health hazard. The vast majority of coaches (92 percent) indicated that smoking adversely affected athletic performance and fitness. The study showed that only 29.2 percent of the coaches were current regular cigarette smokers and that 44.4 percent had smoked previously. Approximately 75 percent of the coaches believed that their own attitudes concerning smoking influenced their athletes and students. The authors concluded that coaches, teachers, physicians, and parents "represent important examples to teenagers and thus education programs should be vigorously directed toward these groups as well as the students if maximum benefit is to result" (51).

Parents and Peers

Numerous studies (8, 31, 32, 56, 86, 98) indicated that parents and siblings, particularly at earlier ages, played an important role in determining the smoking habits of children. And, in terms of whether their children would or would not smoke, parental smoking behavior appeared to be a more important predictor than parental attitude (37, 87). As the child matured and matriculated at higher grade levels in

school, peer influences tended to become the predominant factor in determining smoking behavior (41, 59, 73, 76). As students entered the college environment, parental influence decreased significantly while peer influence became the major force in influencing smoking behavior (47, 48, 69).

Recommendations

1. The American Medical Association and State and local medical associations need to intensify efforts to convince physicians of the importance of informing their patients of the negative consequences of smoking. Physicians should point out the potentially harmful effect of passive smoking on infants. Furthermore, the importance of the exemplar role of the physician and all health professionals should be stressed.

2. The National League of Nursing and other professional nursing organizations should stress the role that nurses can play in influencing patients to stop smoking, and nurses should be aware of their important role as educators and exemplars.

3. State and local education agencies and Parent-Teacher Associations, as well as professional and voluntary health organizations, should continue their adult education efforts. Teachers and coaches also need to be kept informed of new developments with respect to smoking and health and their perceived influence as role models.

4. Health and educational agencies must work to reduce teenage and adult smoking "simultaneously and with equally vigorous efforts since they strongly influence each other" (32).

5. More research is needed to assess fully the impact of the adult and professional exemplar role.

6. Support should be given to movements that advocate the rights of nonsmokers because they have great potential for changing the social climate from acceptance to rejection of cigarette smoking.

Smoking Education and Cessation Programs

In 1969, Schwartz (77) examined 62 studies of smoking-cessation programs in the United States, Canada, Australia, England, Scandinavia, and other parts of Europe during 1957-68. The programs, primarily aimed at adults, employed a wide variety of methods including withdrawal clinics, lobeline and other nicotine substitutes, medication (such as tranquilizers, stimulants, amphetamines, anticholinergics, astringents, and local anesthetics), the "five-day plan", conditioning techniques, physician counseling, role playing, and hypnosis. The author concluded that few techniques were shown to have high success rates, that the most commonly used cessation methods were those which were least acceptable to smokers who desired to stop, and that most methods had high recidivism rates (79).

However, Schwartz commented that “the action of voluntary and governmental agencies, increased efforts by physicians to counsel patients in their offices, and the application of research findings about the psychological factors involved in smoking cessation, are helping to create the environmental conditions which will aid smokers to quit permanently” (77).

Schwartz and Rider (80), in 1975, reviewed the literature on smoking-cessation programs conducted in Canada and the United States during the years 1969 to 1974. They reported that although most methods obtained excellent end-of-treatment results, in that 70 to 80 percent of the subjects quit smoking, follow-up evaluations reduced the percentage of abstainers by 20 to 35 percent. In conclusion, the authors felt that major conditions necessary to program success were the use of multiple cessation methods to accommodate different types of individuals, monetary payment to intensify personal commitment, and the presence of illness or risk factors which motivate abstention. Two major ways that helped individuals stop smoking were found to be self-care techniques and extrinsic measures (78).

Self-care techniques involve using tools or guides to quitting (such as books, records, filters, or other gimmicks and devices), developing one's own way of quitting, and receiving advice on how to abstain. (The National Clearinghouse has developed a Smoker's Self-Testing Kit (52) and a Teenage Self-Test: Cigarette Smoking (55) as self-testing “insight development” procedures for educational use with adolescents and adults (33).) Schwartz (78) reported that self-devised methods contributed to a 13.5 percent reduction in cigarette smoking among adult males from 1964 to 1975.

Extrinsic measures include public information about the health consequences of smoking via newspapers, radio, and television, or through scientific reports, posters, pamphlets, films, and seminars sponsored by heart, cancer, and lung associations, or by governmental, educational, and professional agencies and organizations.

Educational approaches to help adults stop smoking generally are programs conducted in schools or institutional settings and in groups that use the lecture approach (78). In The Seventh Day Adventists' Five-Day Plan, perhaps the most popular type of program, a physician-clergyman team usually conducts five consecutive 2-hour sessions and several weekly follow-up meetings. During this period participants are exposed to films, lectures, models, and discussion; a buddy system is also employed. Participants are encouraged to engage in a physical fitness program, to eat a balanced diet, to drink a lot of fluids, and to abstain from caffeine products and alcohol. Similar plans are widely used by other professional organizations and lay groups. The program has been offered on commuter trains, on television, in prisons, hospitals, and factories, and by physicians, health-related agencies and organizations, and the armed forces. It is estimated that over 11

million cigarette smokers throughout the world have participated in this program (80). Follow-up reports indicate abstinence rates ranging from 14 to 33 percent after 1 year (46, 80).

Voluntary organizations, such as the American Heart Association, the American Cancer Society, and the American Lung Association, have sponsored smoking-withdrawal clinics in the United States and Canada. Several manuals have been developed for training volunteers to conduct smoking-cessation programs. Health departments, hospitals, medical group prepaid health plans such as the Kaiser-Permanente Health Plan, and interagency councils on smoking and health have also conducted group withdrawal clinics. Abstention rates after 1 year varied from 18 to 48 percent (80).

The American Health Foundation (AHF) based in New York City also conducts cessation programs using individualized approaches, positive orientation, individual responsibility, and continuous contact during treatment and maintenance procedures. Participants in the AHF program showed an abstention rate of 30 percent after 1 year (80).

A variety of commercial organizations such as Smoke Watchers, SmokEnders, and Schick offer withdrawal programs to the public. Smoke Watchers charges a relatively small fee for participation in a program based on gradual withdrawal. SmokEnders, using a highly structured format employing positive reinforcement techniques, charged fees ranging from \$120 to \$175 in 1974. Schick Smoking Control Centers, which employ aversive conditioning involving smoke satiation, rapid smoking and shock treatments, charged \$450 in 1975 (80).

Reported success rates for Smoke Watchers varied from 25.4 to 36.8 percent. Those who attended more sessions were reported to have had higher abstention rates, and men had higher success rates than women (80). Schwartz and Rider (80) estimated the abstinence rate for SmokEnders at approximately 27 percent and said that twice as many men as women continued abstinence from cigarettes. The success rate claimed by Schick indicated that 53 percent of the participants had quit after the first year (80).

Schwartz and Rider (80) indicated that experimental research on smoking withdrawal techniques and cessation clinics suffers from major deficiencies, including reports based on inadequate numbers of subjects, inappropriate ways of measuring success, and poorly conducted follow-up procedures.

The Second and Third World Conferences on Smoking and Health recognized the need for standardizing research and evaluation techniques, and the National Interagency Council on Smoking and Health has recommended that basic guidelines be employed in research on the effectiveness of smoking-control programs (57). The Council

suggested that research reports on smoking-control programs cover the following areas:

1. Comprehensive description of the treatment program or references to where such information may be obtained.
2. Description of the data collection procedures and (where applicable) the experimental design.
3. Complete presentation of response rates and reasons for nonresponse at each point in time.
4. Presentation of results including: (a) descriptive data regarding the characteristics of the participants; and (b) analytic data on factors related to success/failure or other aspects measured.

Specific data to be collected, definition of terms, and recommendations that follow-up should be conducted at 1 week, 4 months, and 1 year after treatment, are also contained in the guidelines.

Recommendations

1. Research investigators should be encouraged to follow the recommended guidelines established by the National Interagency Council on Smoking and Health to increase the comparability and replicability of research in the smoking field (88).
2. Educational agencies, professional and voluntary organizations, colleges and universities, and Federal agencies should recommend the use of these guidelines in any smoking research project they sponsor.
3. More research needs to be encouraged to devise new techniques and methods for improving smoking-abstinence rates.
4. Successful programs should be replicated and disseminated to local, State, and Federal agencies concerned with the smoking problem.

Laws, Regulations, and Policies Affecting Adult Smoking

Educational campaigns by professional and voluntary health agencies, the mass media, and others have increased public awareness of the potentially harmful effects of "second-hand smoke." For example, lung associations point out that (1) nonsmokers exposed to smoke in enclosed areas experience physiological changes, such as increased carbon monoxide levels, faster heart beat, and rise in blood pressure; (2) people with respiratory or heart conditions are affected by second-hand smoke; and that (3) second-hand smoke may affect the unborn and infants during the first year of life (93). An increased interest in legislative action was noted by two recent reports (53, 54) summarizing state legislation on smoking and health.

Table 4 summarizes major legislative efforts of the States. In the table, "limitations on smoking" refers to laws and ordinances restricting smoking in public areas, buildings, elevators, schools, drug

TABLE 4.—State legislation on smoking and health for 1976 and 1977

Type of legislation	1976 introduced	Passed	1977 introduced	Passed
Limitations on smoking	68	4	133	12
Commerce	125	16	219	29
Smoking and schools	7	1	16	1
Advertising of tobacco products	3	0	7	0
Sales to minors	4	0	5	1
Insurance and other	8	2	12	1
Totals	215	23	392	44

SOURCE: National Clearinghouse for Smoking and Health (53, 54).

and department stores, hospitals, buses, airplanes, theaters, sports arenas, and certain government buildings. "Commerce" refers to bills and laws regarding taxation and the distribution of cigarette tax revenue, control of sales, licensing of vendors, wholesalers, distributors and retailers, and the control of transportation of tobacco products.

As indicated in Table 4, almost twice as many bills were introduced in 1977 as in 1976 with respect to limitations on smoking, commerce, smoking and schools, advertising, and total legislation. Major legislative efforts appear to be focused primarily on economic factors rather than on health factors. Rozovsky (74) indicates that most of the legislation is not designed for the benefit of nonsmokers (even though it may have some impact) but for purposes of fire safety.

Many communities, as a result of pressure from nonsmokers who are the majority of the adult population, have enacted ordinances restricting second-hand smoke in public places, but as Vanderslice (93) and Rozovsky (74) indicated, enforcement is quite difficult since there are many loopholes and a large percentage of the population may simply choose to ignore the ordinances.

Curran (14) indicates that smoking control is indeed a very difficult, complex, and frustrating aspect of public health preventive campaigns. He stresses the need for better relationships in public health between legal counsel and health personnel in order that more imaginative legal approaches can be developed to combat smoking problems.

A World Health Organization report (100) describes some of the major obstacles preventing legislation from becoming law. Most of the opposition comes not only from tobacco producers and manufacturers, but also from advertising interests since this represents a major source of revenue. In addition, the taxes generated from tobacco sources serve as an important source of revenue for governments, thus creating a real dilemma.

Recommendations

1. More studies should be undertaken to determine the impact of legislation on the prevention and cessation of cigarette smoking.
2. Educators should inform students of the potential impact of second-hand smoke on the health of adults, the unborn, and infants.
3. Communities should be encouraged by health, educational, and civic groups to emphasize the health consequences of smoking, including the rights of nonsmokers.

Influence of School-Based Programs on Parents

This section reports on selected published health education programs and curricula units involving smoking education with emphasis on those designed to involve parents in the educational process.

The School Health Curriculum Project (SHCP) (9), originated nearly a decade ago by educators who envisioned the need for children to assume personal responsibility for their own health decisions, particularly as they relate to cigarette smoking, has become much broader in scope and is now considered as a curriculum, method, and training program that focuses on the human body and on health maintenance. Recently, the National Center for Health Education received a contract award from the Bureau of Health Education, Center for Disease Control, for the management, further development, and nationwide dissemination of the School Health Curriculum Project.

The model employs a core curriculum that uses specific body systems as a central unifying thread. For each grade level, a particular body system is examined in relation to all body systems, enabling students to understand how complex systems interact in one's own body. Each instructional unit begins with an introduction that attempts to increase motivation and to arouse curiosity for learning on the part of the students. Awareness, appreciation, structure and function, desire and disorders, prevention, and a culmination activity represent the other educational phases of SHCP. The project attempts not only to affect the health behaviors of children but also to have impact on peers, teachers, family, and the community.

Basically the model uses a multimedia approach employing models, movies, filmstrips, tape recorders, slides, records, transparencies, newspaper articles, individual work sheets, pamphlets, and textbooks. In addition, learning stations in classrooms present students with the opportunity to teach their own peers (63).

Schools joining the program for the first year are required to send a training team consisting of classroom teachers, a principal, and one or two other school personnel (such as the school nurse, health educator, or a curriculum coordinator) to a designated training center. Broad-based logistic, resource, and financial support for the trainees and the program have been secured from a variety of voluntary health

agencies, educational agencies, civic groups, health departments, as well as Federal agencies. By 1977, SHCP had been implemented in more than 300 school districts involving more than 2,000 schools in the United States (9).

To date, 20 or more evaluation studies concerning SHCP have been conducted with some encouraging evidence indicating that the project holds promise for increasing knowledge and changing lifestyles (9). However, more longitudinal prospective studies are selected to assess more adequately the potential of the project to change lifestyles not only of students but also of teachers and parents.

A unique program, "Know Your Body" (KYB), has been developed and implemented by the American Health Foundation under a grant from the National Cancer Institute (97). This program combines a screening process, to detect risk factors for heart disease, cancer, and cerebral hemorrhage, with school-related projects and activities involving units on personal risk factors, antismoking campaigns, newsletters, and informational meetings with parents to reinforce the concept that individuals are primarily responsible for their own health. The program emphasizes the identification of risk factors, personal decisionmaking, and individualized health education. Each child's height, weight, blood pressure, blood sugar, cholesterol, hematocrit, pulse recovery index, smoking habits, and health knowledge of selected topics are recorded in the student's personal health "passport" which is relayed to the parents and the family physician.

Long-term evaluative studies are needed to determine the effectiveness of KYB programs, their influence on the adoption of healthy lifestyles by children, and their impact on teachers and parents.

Another example is the Health Activities Project (HAP) supported by the Robert Wood Johnson Foundation (28). Student-centered modules have been developed relating to the concept of fitness and various ways by which individuals interact and obtain information from their environment. The modules enable students to measure their own levels of performance and to learn how their bodies function, how they can improve their health and fitness, and how they can make their own health decisions.

Preliminary results from the 1976-77 national trials of experimental materials indicated that HAP activities were effective in aiding children to understand certain health concepts relating to scientific reasoning, decision-making, and the complex interactions of body systems. The evaluative report also emphasized the importance of parents as a source of health information (29).

Extensive field testing of the HAP materials is being conducted in 15 States and it is anticipated that some materials will be revised, as feedback is obtained.

Further research activities should determine the importance of HAP's role in behavior change as well as in community awareness of health education practices.

A professional volunteer committee of the Georgia Heart Association developed a program entitled "Today It's the 3 R's and HBP" that is designed to give students practical information concerning hypertension, as well as to have them serve as health educators to their families and peers (64). Other objectives of the project focus on developing decision-making skills and enhancing school-community relationships.

Science or health teachers are trained by professional local volunteers to understand hypertension and to learn blood pressure measurement techniques. The teachers are provided with copies of the instructional unit and resource materials, films, tapes, and handouts for use in classrooms.

After the training phase, teachers conduct the educational phase of the program involving the heart and circulatory system. Students are trained to take blood pressure and pulse measurements and, upon completing the unit, they take home blood pressure cuffs to take measurements of their parents and siblings. Measurements are recorded on a prepared form, returned to the schools, and subsequently forwarded to the local Heart Association. Persons with elevated blood pressure readings are encouraged to see their physicians for rescreening (44).

To date, this program has reached thousands of children and their parents. However, more research needs to be conducted to determine the potential for altering lifestyles of parents as well as children.

The National Parent-Teacher Association is currently sponsoring six innovative health education projects that actively involve students, parents, and the community (35). These projects are discussed in the section involving the identification and replication of demonstration models.

Recommendations

1. Further research should be conducted into school-based programs designed to influence parental lifestyles, including an assessment of the influence of such programs on smoking behavior.

2. Continued support should be provided for school-community programs that show promise in attempts to change destructive lifestyles of parents.

3. Evaluative studies should be made of school-community-based programs that focus on altering lifestyles of parents and children; those that appear to show promise should be replicated and further evaluated to determine their impact on behavioral change.

Dissemination of Smoking-Prevention Methods and Stop-Smoking Programs

Adult education has a “philosophy of teaching that provides a solid basis for the development of health education as a process of lifelong learning” (21). Research has shown that in student-centered programs the preferred and often the most effective method in adult education is that in which the teacher serves as a facilitator of learning rather than simply as a knowledge transmitter. Evidence also implies that for learning to occur, participants should be involved in the planning of the process and that learning is more effective if the participant’s experience is utilized in the educational process (30). Adult education is based on the beliefs that adults are capable of self-direction, possess unlimited learning potential, and acquire new learning needs as they move through the various stages of life (40).

The involvement of local community residents in attempting to solve social problems is crucial to the adult education process. Common elements of the self-help process generally include the following:

1. Analysis of the problem situation either by concerned citizens or by a change agent.
2. The setting of goals, objectives, and priorities aimed at a solution of the problem or problems.
3. An assessment of the commitment to proceed.
4. Planning and organizing the activities necessary to meet established goals.
5. Carrying out the planned activities.
6. Evaluating the activities in light of the goals and the initial problem assessment (30).

At the county level, health and social organizations have for many years utilized local citizens in planning for the solution of human problems. The Cooperative Extension Service, the American Heart Association, the American Lung Association, the American Cancer Society, and other agencies and institutions have played major leadership roles in involving community residents. The results of research on methods of prevention of smoking by adults and successful techniques to promote stop-smoking programs can be disseminated through community services and the mass media.

The Cooperative Extension Service (CES) offers great potential for disseminating health information to the public because of its nationwide scope and affiliates in every state. Established in 1914, the Cooperative Extension Service was developed to communicate research findings to the public and, according to Yep (101), through its 4-H Youth and Home Economics programs, has become heavily involved in health education programs. Further, Yep feels that CES has the ability to become a highly significant force in improving the nation’s health because it is assuming a major leadership role in assisting consumers to accept greater individual responsibility for their own health.

Boone (7) mentions three major methods by which extension educators can provide means to disseminate information: *Individual contact* in which educator and learner interact in relation to a particular problem; *group methods*, such as lectures, panel forums, demonstrations, and workshops; and *mass media methods* to communicate with large segments of the population. One drawback, however, is the fact that few extension services have professional health educators on the program staff.

Major educational, professional, and voluntary health organizations, such as the American Cancer Society, the American Heart Association, the American Lung Association, the American Public Health Association, the American School Health Association, and others, have attempted to mobilize public support in nonsmoking efforts. In addition, 35 State interagency councils and 64 metropolitan councils have conducted nonsmoking projects (17). All of these organizations, acting in concert with the National Interagency Council on Smoking and Health and the National Clearinghouse on Smoking and Health, have the potential to effectively disseminate research results to the general public. In addition, universities, community colleges, and public adult education programs can play a role in such program efforts.

The influence of mass media on smoking behavior remains relatively unclear at this point. For example, O'Keefe (61) questions the effectiveness of antismoking TV-radio educational messages on cigarette consumption, while Warner's findings (96) support their effectiveness. According to the Task Force Report on Prevention, Control and Education in Respiratory Disease (17), the mass media appear to have been useful in stimulating action in persons already motivated to stop smoking and in recruiting individuals for smoking-cessation programs. Worden, et al. (99) found that adults showed greater interest in media messages that offered positive advice on how to quit smoking than in those which used approaches that were negative or satirical. A study by Maccoby (45) indicated that mass media techniques led to a significant reduction in smoking by subjects exposed to community programs that focused on reduction or risk.

Dubren (18) evaluated a sample of 310 viewers who participated in a televised "stop smoking clinic" in New York City. Participants were exposed over a 4-week period to 30- to 90-second daily televised segments designed to assist them in a step-by-step approach to stop smoking. On a mailback questionnaire, 10 percent of the subjects indicated they had stopped smoking at the conclusion of the program. However, evaluations of this nature may be somewhat suspect because self-reports were used.

Public education involving smoking cessation has emphasized mass communication techniques. Ramstrom (72) indicates the relative amount of face-to-face communication needs to be increased by

enlisting health professionals and others who can do such work and by organizing special training for health personnel, educators, and community leaders to establish a network of key persons to promote cessation.

Recommendations

1. To achieve effective community adult health education programs, health professionals should possess adult education skills and understand strategies. Hence, health agencies, institutions, and organizations should offer preservice and inservice programs to provide the necessary skills for working effectively with adults.

2. Comprehensive programs should be developed and implemented to improve and change health-related lifestyles, and results of successful programs should be disseminated.

3. The use of the mass media as a change agent should be more adequately assessed through well-designed research.

Identification and Replication of Demonstration Models

Several projects that appear to have potential for adult education in relation to prevention of cigarette smoking or cessation are reviewed in this section. However, several reports (57, 80) note that there are serious limitations in terms of data collection, research design, failure to account for interaction effects, methodology, and follow-up, which may make difficult full assessment of the impact of a specific program on a community.

In 1972, a group of researchers from Stanford University conducted a 3-year longitudinal field study of modification of cardiovascular risk factors through community education (45). The study was concerned with the creation and evaluation of methods for achieving behavior changes in smoking, exercise, and diet that could apply to other large population groups and also be cost-effective. The study was conducted in three northern California communities. One community received only mass media messages, another mass media combined with face-to-face interpersonal communication, and the third served as a control group for comparison purposes.

To determine effects, the experimenters collected baseline and yearly follow-up data from surveys based on interviews and medical examinations of a random sample of thirty-five 59-year-old males and females in each of the three communities. The results indicated a slight decline in cigarette smoking in the second year of the study among residents in the control group, a greater decline using only mass media, and the greatest decrease in smoking among the residents of the community exposed to the mass media and interpersonal communications.

The Stanford experiment tends to offer evidence that behavior change can be accomplished through sustained community health education efforts. To more fully understand methods of inducing changes in lifestyles, however, more research needs to be undertaken concerning the potential of mass media and individualized face-to-face instruction for reducing risk factors in populations.

An intensive community-organized antismoking education program conducted in San Diego, California, utilized mass media techniques, pamphlets, exhibits, films, public lectures, school lectures, counseling, cessation groups, and loudspeaker vans (3). Kelson, et al. (38) in their analysis indicate an impressive reduction in smoking among boys in grades 7 through 12; however, smoking by girls had increased, except in 11th and 12th grade. A forthcoming report from the Bureau of Health Education describing an evaluation of the San Diego experiment may shed some light on the impact of a comprehensive antismoking community program.

The National Parent-Teacher Association is currently sponsoring several projects in six States designed to create public awareness of the need for health education (35). The pilot projects focus on such diverse adult activities as the development of school/community health education councils to provide for community awareness and planning of workshops, the use of multimedia programs involving PTA members to generate support for comprehensive health education programs, the development of programs that encourage parents and teachers as role models for student health behavior, and the fostering of health education resource centers. Through the mass media, communities are being stimulated to develop programs to identify health problems at the local level. These programs would appear, philosophically, to affect adult behavior; however, evaluative reports have not been completed.

Smith (33) describes an attempt to persuade an entire community to stop smoking for a single day. Monticello, Minnesota, a town of approximately 1,700 people, received State and national media attention in its attempts to persuade its citizenry to quit smoking on January 7, 1974. The Cancer Society, the Lung Association, the Heart Association, and the State departments of public health and education all played active roles.

Posters, pledge cards, fact sheets, and the mass media dramatized the health hazards of smoking in an attempt to convince residents to stop smoking on 'D-Day' as well as to consider total abstinence from cigarettes. A random survey of pledge card signers indicated that 7 percent of those surveyed may have quit entirely; however, evaluation by self-reported behavior is extremely unreliable.

While community programs such as the Stanford University Project appear to offer promise for changing lifestyles, in the final analysis, present ongoing programs need to be evaluated more fully to determine their relative effectiveness in the adult population.

In addition, Davis (15) feels that, because of the inherent difficulties in getting communities to attempt total community antismoking programs, maximum effort probably should be placed on key adult groups, such as parents, teachers, and health professionals, as examples for youth.

Recommendations

1. More innovative long-term, longitudinal projects, such as the Stanford University Project, should be replicated with other populations to determine their influence in changing lifestyles and their cost-effectiveness.

2. More research is needed to develop model programs designed to aid adults to stop smoking and to prevent the start of smoking in children.

3. Demonstration and model antismoking projects should be supported and encouraged by local and State educational agencies, professional and voluntary organizations, and the Federal Government.